09/936588
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SEQUENCE LISTING

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NEW ENGLAND BIOLABS, INC.
BOSTON BIOMEDICAL RESEARCH INSTITUTE

<120> METHOD FOR GENERATING SPLIT, NON-TRANSFERABLE GENES
THAT ARE ABLE TO EXPRESS AN ACTIVE PROTEIN PRODUCT

<130> NEB-163-PCT

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<150> 60/135,677
<151> 1999-05-24

<160> 134

<170> PatentIn Ver. 2.0

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Val His Val Asp Ile Asp Pro Ala Glu Ile Gly Lys Asn Lys Gln Pro
35 40 45

His Val Ser Ile Cys Ala Asp Val Lys Leu Ala Leu Gln Gly Met Asn
50 55 60

Ala Leu Leu Glu Gly Ser Thr Ser Lys Lys Ser Phe Asp Phe Gly Ser
65 70 75 80

Trp Asn Asp Glu Leu Asp Gln Gln Lys Arg Glu Phe Pro Leu Gly Tyr
85 90 95

Lys Thr Ser Asn Glu Glu Ile Gln Pro Gln Tyr Ala Ile Gln Val Leu
100 105 110

Asp Glu Leu Thr Lys Gly Glu Ala Ile Ile Gly Thr Gly Val Gly Gln
115 120 125

His Gln Met Trp Ala Ala Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln
130 135 140

Trp Leu Ser Ser Ala Gly Leu Gly Ala Met Gly Phe Gly Leu Pro Ala
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Ala Ala Gly Ala Ser Val Ala Asn Pro Gly Val Thr Val Val Asp Ile
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Asp Gly

<210> 43
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Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly Lys Asn Lys Gln
         35                  40                  45

Pro His Val Ser Ile Cys Ala Asp Ile Lys Leu Ala Leu Gln Gly Leu
     50                  55                  60

Asn Ser Ile Leu Glu Ser Lys Glu Gly Lys Leu Lys Leu Asp Phe Ser
 65                  70                  75                  80

Ala Trp Arg Gln Glu Leu Thr Glu Gln Lys Val Lys His Pro Leu Asn
                 85                  90                  95

Phe Lys Thr Phe Gly Asp Ala Ile Pro Pro Gln Tyr Ala Ile Gln Val
            100                 105                 110

Leu Asp Glu Leu Thr Asn Gly Asn Ala Ile Ile Ser Thr Gly Val Gly
        115                 120                 125

Gln His Gln Met Trp Ala Ala Gln Tyr Tyr Lys Tyr Arg Lys Pro Arg
    130                 135                 140

Gln Trp Leu Thr Ser Gly Gly Leu Gly Ala Met Gly Phe Gly Leu Pro
145                 150                 155                 160

Ala Ala Ile Gly Ala Ala Val Gly Arg Pro Asp Glu Val Val Val Asp
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Ile Asp Gly
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<213> Escherichia coli

<400> 44

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Asp Asp Arg Val Thr Gly Lys Leu Glu Ala Phe Ala Ser Arg Ala Lys
             20                  25                  30

Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly Lys Asn Lys Gln
         35                  40                  45

Pro His Val Ser Ile Cys Ala Asp Ile Lys Leu Ala Leu Gln Gly Leu
     50                  55                  60

Asn Ser Ile Leu Glu Ser Lys Glu Gly Lys Leu Lys Leu Asp Phe Ser
 65                  70                  75                  80
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Ala Trp Arg Gln Glu Leu Thr Val Gln Lys Val Lys Tyr Pro Leu Asn
                 85                  90                  95

Phe Lys Thr Phe Gly Asp Ala Ile Pro Pro Gln Tyr Ala Ile Gln Val
            100                 105                 110

Leu Asp Glu Leu Thr Asn Gly Ser Ala Ile Ile Ser Thr Gly Val Gly
        115                 120                 125

Gln His Gln Met Trp Ala Ala Gln Tyr Tyr Lys Tyr Arg Lys Pro Arg
    130                 135                 140

Gln Trp Leu Thr Ser Gly Gly Leu Gly Ala Met Gly Phe Gly Leu Pro
145                 150                 155                 160

Ala Ala Ile Gly Ala Ala Val Gly Arg Pro Asp Glu Val Val Val Asp
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Ile Asp Gly
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Val Leu His Ile Asp Ile Asp Pro Thr Ser Ile Ser Lys Thr Val Thr
        35                  40                  45

Ala Asp Ile Pro Ile Val Gly Asp Ala Arg Gln Val Leu Glu Gln Met
     50                  55                  60

Leu Glu Leu Leu Ser Gln Glu Ser Ala His Gln Pro Leu Asp Glu Ile
 65                  70                  75                  80

Arg Asp Trp Trp Gln Gln Ile Glu Gln Trp Arg Ala Arg Gln Cys Leu
                85                  90                  95

Lys Tyr Asp Thr His Ser Glu Lys Ile Lys Pro Gln Ala Val Ile Glu
            100                 105                 110

Thr Leu Trp Arg Leu Thr Lys Gly Asp Ala Tyr Val Thr Ser Asp Val
        115                 120                 125

Gly Gln His Gln Met Phe Ala Ala Leu Tyr Tyr Pro Phe Asp Lys Pro
    130                 135                 140
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Arg Arg Trp Ile Asn Ser Gly Gly Leu Gly Thr Met Gly Phe Gly Leu
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Cys Val Thr Gly
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35 40 45

Ala His Val Ala Leu Gln Gly Asp Leu Asn Ala Leu Leu Pro Ala Leu
50 55 60

Gln Gln Pro Leu Asn Gln Cys Asp Trp Gln Gln His Cys Ala Gln Leu
65 70 75 80

Arg Asp Glu His Ser Trp Arg Tyr Asp His Pro Gly Asp Ala Ile Tyr
85 90 95

Ala Pro Leu Leu Leu Lys Gln Leu Ser Asp Arg Lys Pro Ala Asp Cys
100 105 110

Val Val Thr Thr Asp Val Gly Gln His Gln Met Trp Ala Ala Gln His
115 120 125

Ile Ala His Thr Arg Pro Glu Asn Phe Ile Thr Ser Ser Gly Leu Gly
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Pro Asn Asp Thr Val Val Cys Ile Ser Gly
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tgattaaata aaccaagatt ttaccttaat taag 154

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acttacatag actttttttgt ttacgtattc t 151

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<210> 66
<211> 33
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<400> 66
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<210> 67
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<213> Nicotiana tabacum

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<210> 68
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<210> 78
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<210> 79
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<210> 82
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<210> 87
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<210> 88
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<210> 89
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<210> 90
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Leu Phe Lys His Glu
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<400> 99
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<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 101
Leu Phe Lys His His
1 5

<210> 102
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 102
Leu Phe Lys His Gln
1 5

<210> 103
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 103
Met Phe Lys His Val
1 5

<210> 104
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 104
Val Phe Lys Gln Lys
1 5

<210> 105
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 105
Leu Phe Lys Gln Gln
1 5

<210> 106
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 106
Leu Phe Lys His Ser
1 5

<210> 107
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 107
Cys Leu Asn Thr Gly
1 5

<210> 108
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 108
Cys Leu Asn Ser Arg
1 5

<210> 109
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 109
Val Phe Lys His Leu
1 5

<210> 110
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 110
Cys Leu Asn Asn Ile
1 5

<210> 111
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 111
Leu Phe Lys His Gln
1 5

<210> 112
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 112
Cys Leu Asn Lys His
1 5

<210> 113
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 113
Met Phe Lys Gln Tyr
1 5

<210> 114
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 114
Cys Leu Asn Lys Gln
1 5

<210> 115
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 115
Cys Leu Asn Met Ser
1 5

<210> 116
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 116
Leu Cys Leu Asn Ile Leu Ala
1 5

<210> 117
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 117
Asn Cys Leu Asn Ile Asn Ala
1 5

<210> 118
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 118
Leu Met Phe Lys His Leu Ser
1 5

<210> 119
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 119
Thr Leu Phe Lys His Thr Arg
1 5

<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 120
Lys Val Phe Lys Gln Lys Glu
1 5

<210> 121
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 121
His Leu Val Phe Lys His Leu
1 5

<210> 122
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 122
Leu Cys Leu Asn Thr Leu Leu
1 5

<210> 123
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 123
Leu Cys Leu Asn Asn Leu Val
1 5

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 124
Glu Val Phe Lys His Glu Gly
1 5

<210> 125
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 125
Lys Val Phe Lys Gln Lys Gly
1 5

<210> 126
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 126
Thr Cys Leu Asn Thr Thr Ile
1 5

<210> 127
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 127
Met Cys Leu Asn Asn Met Asn
1 5

<210> 128
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 128
Leu Leu Phe Lys Gln Leu Arg
1 5

<210> 129
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 129
Arg Cys Leu Asn Asn Arg Leu
1 5

<210> 130
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 130
Met Val Phe Lys Gln Met Ala
1 5

<210> 131
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 131
Ala Met Phe Lys Gln Ala Thr
1 5

<210> 132
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 132
Leu Val Phe Lys His Leu Asp
1 5

<210> 133
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 133
Lys Met Phe Lys Gln Lys Thr
1 5

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the
ends of the Tn7 transposon

<400> 134
Tyr Cys Leu Asn Asn Tyr Phe
1 5